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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/778,071	02/07/2001	Takashi Takeuchi	202937US2S	7369

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EXAMINER

RAMANA, ANURADHA

ART UNIT PAPER NUMBER

3732

DATE MAILED: 10/09/2003

124

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/778,071

Applicant(s)

TAKEUCHI ET AL.

Examiner

Anu Ramana

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 July 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-2, 8-9 and 11 is/are rejected.
- 7) ☒ Claim(s) 3 is/are objected to.
- 8) ☒ Claim(s) 4-7 and 10 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 August 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Applicants' election without traverse of the invention defined by claims 1-3, 8-9 and 11 in Paper No. 11, filed on July 18, 2003 is noted. Accordingly, this office action addresses only claims 1-3, 8-9 and 11.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

Claims 8-9 and 11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The limitation "an array direction" renders the claims vague and indefinite since it is unclear what direction the Applicants' are referring to with respect to the length (longitudinal direction) and width (lateral direction) of each piezoelectric member.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 8, 9 and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Saitoh et al. (US 5,402,791).

Saitoh et al. disclose an array-type ultrasonic probe having a plurality of piezoelectric elements 1 wherein each piezoelectric element is constructed of a single crystal piezoelectric, for e.g. lead titanate, for use in a medical diagnostic apparatus with an upper electrode 4, a lower electrode 5 and a flexible printed wiring board 9 having a plurality of pattern wires; each pattern wire extending in a longitudinal direction of each piezoelectric element and having a width

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smaller than the width of each piezoelectric element (Figure 1, col. 1, lines 8-66, col. 2, lines 36-40, col. 3, lines 18-25, col. 8, lines 55-68 and col. 9, lines 1-6).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saitoh et al. in view of Sakazaki et al. (US 6,323,061).

Saitoh et al. disclose an array-type ultrasonic probe or "element" having a plurality of piezoelectric elements 1 wherein each piezoelectric element is constructed of a single crystal piezoelectric, for example lead titanate, with an upper electrode layer 4 and a lower electrode layer 5 (Figure 1 and col. 2, lines 36-40).

Saitoh et al. do not disclose that upper and lower electrode layers are made of conductive resin.

Sakazaki et al. teach an electrode layer 13 made of conductive resin (col. 4, lines 15-18 and Figure 1(a)).

It is the Examiner's position, that lower acoustic impedance and excellent cutting characteristics are inherent properties of resins.

Accordingly it would have been obvious to one of ordinary skill in the art at the time the invention was made to have provided an electrode layer 4 and a lower electrode layer 5 wherein the electrode layer is made of a conductive resin, as taught by Sakazaki et al., since it was known in the art that an electrode layer can be made of conductive resin.

Regarding claim 2, composite piezoelectric members of the 1-3 or 2-2 type are well known.

Accordingly it would have been obvious to one of ordinary skill in the art at the time the invention was made to have made the ultrasonic element of the combination of Saitoh et al. and

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Sakazaki et al. with a 1-3 or 2-2 type piezoelectric member since it was known in the art to provide 1-3 or 2-2 type piezoelectric members in ultrasonic elements.

Response to Arguments

Applicant's arguments with respect to claims 1-2 and 8-9 in Paper No. 9, filed on March 11, 2003, have been considered but are moot in view of the new ground(s) of rejection.

Allowable Subject Matter

The indicated allowability of claim 9 is withdrawn in view of the rejections made in this Office Action. The Examiner apologizes for any inconvenience caused to the Applicants' due to this change.

Claim 3 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anu Ramana whose telephone number is (703) 306-4035. The examiner can normally be reached Monday through Friday between 8:00 am to 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kevin Shaver can be reached at (703) 308-2582. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0858.

AR *Anu Ramana*
October 4, 2003

Kevin Shaver
KEVIN SHAVER
10/6/03
SUPERVISORY PATENT EXAMINER
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